BMPO

Cat. No.: HY-121137

CAS No.: 387334-31-8

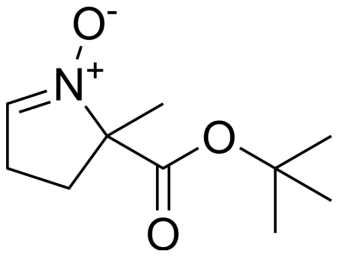
Molecular Formula: $C_{10}H_{17}NO_3$

Molecular Weight: 199.25

Target: Others

Pathway: Others

Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (501.88 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	5.0188 mL	25.0941 mL	50.1882 mL
	5 mM	1.0038 mL	5.0188 mL	10.0376 mL
	10 mM	0.5019 mL	2.5094 mL	5.0188 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (12.55 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (12.55 mM); Clear solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (12.55 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

BMPO (BocMPO) is a cell-permeable superior spin trap with favorable chemical and spectroscopic features. BMPO (BocMPO) can be used for detecting thiyl radicals, hydroxyl radicals, superoxide anions and glutathiyl radicals[1].

In Vitro

BMPO is able to trap both •OH and GS• to form more persistent BMPO/•OH and BMPO/•SG adducts. In addition, the electron spin resonance (ESR) spectra of BMPO-derived adducts exhibit high signal-to-noise ratios in biological systems. For example, the ESR spectrum of the BMPO glutathionyl adduct (BMPO/•SG) does not fully overlap with the spectrum of its hydroxyl adduct. The favorable chemical and spectroscopic features make BMPO ideal for the detection of superoxide anions, hydroxyl and thiyl radicals.[1]

The potential toxic effects of the spin trap BMPO is measured by two estimates of cell viability (trypan blue exclusion and colony formation).[3]
BMPO has no significant effect on cell viability at 2.5 or 25 mM in CHO cells. However, it leads to a significant increase in the number of cells that are unable to exclude Trypan blue at 50 mM BMPO. BMPO significantly reduces a 30% reduction in colony formation at 25 mM concentration in CHO cells. And, BMPO completely inhibits the colony formation of 9L tumor cells at 50 mM.[3]
The cell function (rate of oxygen consumption) is also measured, BMPO (25 mM) significantly reduces the oxygen consumption rates in CHO cells.[3]
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. H Zhao, et al. Synthesis and biochemical applications of a solid cyclic nitrone spin trap: a relatively superior trap for detecting superoxide anions and glutathiyl radicals. Free Radic Biol Med

[2]. Hongtao Zhao, et al. Detection and characterization of the product of hydroethidine and intracellular superoxide by HPLC and limitations of fluorescence. Proc Natl Acad Sci U S A

[3]. Nadeem Khan, et al. Spin traps: in vitro toxicity and stability of radical adducts. Free Radic Biol Med. 2003 Jun 1;34(11):1473-81.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA